

Disposal of bird carcasses infected with avian influenza

Guidance for Landfills

Background:

Avian influenza (bird flu), particularly the High Pathogen Avian Influenza (HPAI) H5N1 virus strain, has become a worldwide concern as the virus has been confirmed in Asia, Africa, and Europe. The forecast is that the virus will make its way to North America, possibly as early as spring 2006. Alaska is thought to be one of the primary entry points for the virus due to the migration of wild birds from Asia and over the Arctic region from Europe. Migrating wild birds have the potential to carry Asian H5N1 and subsequently transmit the disease to resident wild birds and domestic flocks. The Alaska State Veterinarian is preparing a response plan to be implemented in the event that H5N1, or any HPAI, is confirmed in Alaska. Safe and proper disposal of carcasses and related waste are a significant part of the plan.

Regulations:

The disposal of animal carcasses is presently covered by the solid waste regulations in Title 18, Chapter 60 of the Alaska Administrative Code [18 AAC 60.010(d)]. Subparagraph (d)(1) of this regulation states that “A person shall dispose of a carcass of livestock, including poultry, infected with a communicable disease, only if authorized by the state veterinarian and in accordance with 9 CFR 53.4”. Title 9, part 53.4 of the Code of Federal Regulations (9 CFR 53.4) states that “animals ...shall be ...disposed of by burial or burning...” under the supervision of an employee of the federal Animal and Plant Health Inspection Service.

Subparagraph 18 AAC 60.010(d)(2) in the state regulations goes on to say that animal carcasses other than those of infected livestock or poultry can be disposed “(A) at a landfill ...with a permit...; (B) by cremation or incineration ...or (C) by burial on land, with the landowner’s permission”.

Recommended Disposal:

The intent in disposing of diseased carcasses is to limit the spread of the disease and to destroy the disease agent. The most protective disposal methods do both. The State of Wisconsin has proposed four tiers of disposal methods (Tier 1 being the most protective) with recommended on-site measures that include alkaline tissue digestion, high temperature controlled incineration, and dedicated on-site landfilling. Alaska does not have any large-scale poultry operations that would call for corresponding large-scale disposal measures. Since there are less than 20 small scale (600-1000 birds) commercial growers and an undetermined amount of private “backyard” bird owners, on-site burial is the most protective measure since it does not require the transportation of infected birds and materials off the site, thereby limiting the possible spread of disease. However, the State Solid Waste Program has no regulatory authority to require private landowners to bury carcasses on their property. Private landowners may be hesitant to dispose of carcasses on their property, and may have to temporarily store carcasses pending arrival of equipment to excavate a burial pit. Whether carcasses are disposed on site or transported off-site for disposal, proper containment of carcasses and the availability and proper use of personal protective equipment are paramount for protection of public health. With these issues in mind, the following disposal options are offered in priority order:

1. Land burial of carcasses on site: For private landowners and commercial growers who agree to bury on site, this option limits the possible spread of the H5N1 virus during transportation. This option contains the following elements:
 - a. A burial pit must be excavated at a depth and size to accommodate all carcasses of birds that have died from bird flu and all bedding, feces, and feed that have come from or been in contact with the birds. Lime may be layered on the carcasses as an additional disinfectant measure. After disposal, the pit should be closed/covered with 2 to 4 feet of clean cover material/soil. The bottom of the disposal pit should not be less than 10 feet above the high groundwater level. The pit should be at least 100 feet from a drinking water well, or surface drinking water source.
 - b. All carcasses, feces, bedding, and feed material that are not immediately buried (within 24 hours) should be double bagged in plastic bags and sprayed with disinfectant pending disposal.
 - c. The location of the disposal pit will be identified with a visible marker, recorded by GPS coordinates and the coordinates reported to the State Veterinarian.
 - d. Any person disposing of carcasses and associated waste should wear personal protective equipment (PPE). This should include disposable nitrile or vinyl gloves, disposable coveralls and other protective clothing, shoe covers, safety goggles, and disposable particulate respirators at a minimum. PPE should be double bagged, disinfected and buried in the disposal pit after all carcasses and other material has been disposed. Hand washing for 15-30 seconds afterwards is highly recommended. Prior to leaving an infected premise, personnel, equipment, and vehicles will be cleaned and disinfected. A log book will be kept to record all personnel and vehicles that have had contact with the premise. Workers should also contact their physician or the Alaska Department of Public Health (1-888-972-6358 or in Anchorage: (907) 334-2292) for access to antiviral medicines.
2. Disposal at a permitted landfill off-site: The landowner or grower will probably receive assistance from the State Veterinarian and/or solid waste personnel on this step. If carcasses and material must be disposed off-site at a permitted landfill, the following actions should be taken:
 - a. A permit to move infected carcasses or materials (bedding, manure) from the premises must be obtained from the state veterinarian. Contact the landfill prior to transport to arrange disposal. All persons involved in the disposal process should use the recommended PPE and sanitary practices described in paragraph 1.d. above.
 - b. All carcasses, feces, bedding, etc. must be double bagged and disinfected for transport to a permitted landfill. Infected materials are placed in the first plastic bag, which is sealed. The outside of the bag is disinfected, then placed in a second plastic bag and sealed. The outside of this bag is also sprayed with disinfectant. The PPE worn by the person

disposing of the carcasses will be removed and double bagged using the process outlined above.

- b. The doubled bagged material must be carefully placed in a disinfected plastic container (trash can, storage container) with a lid. The inside of this container is sprayed with disinfectant and the lid secured. The outside of the plastic container must be decontaminated/disinfected (sprayed with disinfectant) then placed into the transport vehicle. The persons disposing of the birds must wash and sanitize their hands and boots, then change clothes prior to leaving the infected premises. The tires of the transport vehicle must be sanitized prior to leaving the premises. Infected materials must be transported in a covered pick up or dump truck, and not in a compactor truck. Do not place bags with known infected carcasses and materials in regular household waste or in dumpsters.
 - c. Upon receipt, landfill personnel, wearing disposable latex/nitrile gloves, should immediately remove the plastic container from the vehicle. The plastic container is taken to burial site and the bags buried in a dedicated trench or pit, without compaction. Bags should be covered immediately, and may be limed before cover. Bags should not be placed on the regular working face where compaction equipment is operating. The plastic container is cleaned and disinfected, the liquids poured into the trench or pit, and the container is placed back into the transport vehicle.
 - d. Landfill operators will make an entry in the operating log upon receipt of bird flu carcasses and materials. The State Veterinarian will be notified by the operator when carcasses are disposed.
3. Disposal at a permitted incinerator: For locations in the State with a permitted incinerator, such as Barrow, carcasses and materials can be transported to the incinerator (same procedure as transport to a landfill, double bagged, disinfected, in a disinfected plastic container with a lid) for destruction. Personnel should follow all the containment, transportation, and safety recommendations outlined above. The virus is effectively killed at a temperature of 60 degrees C.
4. If none of the above options are available, other less desirable options may include open burning or composting (open or windrow) of the carcasses. Be aware that these methods may not contain the disease agent so precautions against infection are necessary. Prior to using these methods you must obtain approval from the State Veterinarian and the process must be overseen by a departmental employee.